

## SEQUENCE LISTING

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TORRESI, JOSEPH

<120> VIRAL VARIANTS AND USES THEREFOR

<130> 4420.000600

<140> 09/877,340

<141> 2001-06-08

<150> 60/210,395

<151> 2000-06-09

<160> 18

<170> PatentIn version 3.1

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<211> 76

<212> PRT

<213> Hepatitis B virus

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Leu Xaa Xaa Asp Trp Gly Pro Cys Xaa Xaa His Gly Xaa His Xaa Ile  
 1 5 10 15  
 Arg Xaa Pro Arg Thr Pro Xaa Arg Val Xaa Gly Gly Val Phe Leu Val  
 20 25 30  
 Asp Lys Asn Pro His Asn Thr Xaa Glu Ser Xaa Leu Xaa Val Asp Phe  
 35 40 45  
 Ser Gln Phe Ser Arg Gly Xaa Xaa Xaa Val Ser Trp Pro Lys Phe Ala  
 50 55 60  
 Val Pro Asn Leu Xaa Ser Leu Thr Asn Leu Leu Ser  
 65 70 75

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 Xaa Pro Leu His Pro Ala Ala Met Pro His Leu Leu Xaa Gly Ser Ser  
 20 25 30  
 Gly Leu Xaa Arg Tyr Val Ala Arg Leu Ser Ser Xaa Ser Xaa Xaa Xaa  
 35 40 45  
 Asn Xaa Gln Xaa Xaa Xaa Xaa Xaa Xaa Leu His Xaa Xaa Cys Ser Arg  
 50 55 60  
 Xaa Leu Tyr Val Ser Leu Xaa Leu Leu Tyr Xaa Thr Xaa Gly Xaa Lys  
 65 70 75 80  
 Leu His Leu Xaa Xaa His Pro Ile Xaa Leu Gly Phe Arg Lys Xaa Pro  
 85 90 95  
 Met Gly Xaa Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala  
 100 105 110  
 Ile Xaa Xaa Xaa Xaa Xaa Arg Ala Phe Xaa His Cys Xaa Xaa Phe Xaa  
 115 120 125  
 Tyr Met Asp Asp Xaa Val Leu Gly Ala Xaa Xaa Xaa Xaa His Xaa Glu  
 130 135 140  
 Xaa Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Leu Xaa Xaa Gly Ile His  
 145 150 155 160  
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Gly Tyr Xaa Ile Gly  
180

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Thr Gly Pro Cys Lys Thr Cys Thr Thr Pro Ala Gln Gly Asn Ser Met  
1 5 10 15

Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Asp Gly Asn Cys Thr Cys  
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Asn Gln Tyr Gly Thr Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln  
1 5 10 15

Leu Tyr Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Trp Lys Leu  
20 25 30

His Leu Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met  
35 40 45

Gly Val Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile  
50 55 60

Cys Ser Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr  
65 70 75 80

Met Asp Asp Val Val Leu Gly Ala Lys  
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Thr Gly Pro Cys Lys Thr Cys Thr Thr Pro Ala Gln Gly Asn Ser Met  
1 5 10 15

Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Asp Arg Asn Cys Thr Cys  
20 25 30

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Thr Gly Thr Cys Lys Thr Cys Thr Thr Pro Ala Gln Gly Asn Ser Met  
1 5 10 15

Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Asp Gly Asn Cys Thr Cys  
20 25 30

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Asn Gln Tyr Gly Thr Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln  
 1 5 10 15  
 Leu Tyr Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Trp Lys Leu  
 20 25 30  
 His Leu Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met  
 35 40 45  
 Gly Val Gly Leu Ser Pro Phe Leu Met Ala Gln Phe Thr Ser Ala Ile  
 50 55 60  
 Cys Ser Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr  
 65 70 75 80  
 Met Asp Asp Val Val Leu Gly Ala Lys  
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Asn Gln Tyr Gly Thr Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln  
 1 5 10 15  
 Leu Tyr Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Trp Lys Leu  
 20 25 30  
 His Leu Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met  
 35 40 45  
 Gly Val Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile  
 50 55 60  
 Cys Ser Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr  
 65 70 75 80  
 Val Asp Asp Val Val Leu Gly Ala Lys  
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Asn Gln Tyr Gly Thr Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln  
 1 5 10 15  
 Leu Tyr Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Trp Lys Leu  
 20 25 30  
 His Leu Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met  
 35 40 45  
 Gly Val Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile  
 50 55 60  
 Cys Ser Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr  
 65 70 75 80  
 Ile Asp Asp Val Val Leu Gly Ala Lys  
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 1 5 10 15  
 Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Asp Arg Asn Cys Thr Cys  
 20 25 30

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1 5 10 15

Leu Tyr Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Trp Lys Leu  
20 25 30

His Leu Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met  
35 40 45

Gly Val Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile  
50 55 60

Cys Ser Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr  
65 70 75 80

Ile Asp Asp Val Val Leu Gly Ala Lys  
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1 5 10 15

Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Asp Gly Asn Cys Thr Cys  
20 25 30

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Asn Gln Tyr Gly Thr Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln  
 1 5 10 15  
 Leu Tyr Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Trp Lys Leu  
 20 25 30  
 His Leu Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met  
 35 40 45  
 Gly Val Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile  
 50 55 60  
 Cys Ser Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr  
 65 70 75 80  
 Ile Asp Asp Val Val Leu Gly Ala Lys  
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 Leu Tyr Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Trp Lys Leu  
 20 25 30  
 His Leu Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met  
 35 40 45  
 Gly Val Gly Leu Ser Pro Phe Leu Met Ala Gln Phe Thr Ser Ala Ile  
 50 55 60  
 Cys Ser Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr  
 65 70 75 80  
 Val Asp Asp Val Val Leu Gly Ala Lys  
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 20 25 30

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 1 5 10 15

Leu Tyr Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Trp Lys Leu  
 20 25 30

His Leu Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met  
 35 40 45

Gly Val Gly Leu Ser Pro Phe Leu Met Ala Gln Phe Thr Ser Ala Ile  
 50 55 60

Cys Ser Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr  
 65 70 75 80

Val Asp Asp Val Val Leu Gly Ala Lys  
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1 5 10 15

Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Asp Gly Asn Cys Thr Cys  
20 25 30

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&lt;212&gt; PRT

&lt;213&gt; Hepatitis B virus

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Asn Gln Tyr Gly Thr Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln  
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Leu Tyr Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Trp Lys Leu  
20 25 30

His Leu Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met  
35 40 45

Gly Val Gly Leu Ser Pro Phe Leu Met Ala Gln Phe Thr Ser Ala Ile  
50 55 60

Cys Ser Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr  
65 70 75 80

Val Asp Asp Val Val Leu Gly Ala Lys  
85

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D  
concl'd.